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wants and tastes; but in places where wasps are not very abundant the products of their selection are shared by other insects.

10. As the most industrious and most skillful insects, and withal those most dependent upon flowers for food, bees have played the most prominent part in selecting flowers—at least in Germany. They have given us the most numerous, most diversified and most specially elaborated flowers, the visiting of which calls into play those faculties which the bees have acquired and inherited through their labors in caring for their young.

11. Finally, certain syrphus-flies, passionately fond of color, and themselves brightly colored, but not especially dependent upon flowers for food, have succeeded in producing certain flowers corresponding to their tastes; meantime natural selection has given rise to contrivances in these flowers which secure cross-fertilization through the instrumentality of these insects.—*Wm. Trelease*.

BOTANICAL NEWS.—In the February and March numbers of the *Botanical Gazette*, Mr. A. H. Curtiss begins a series of papers on the Botany of the Shell Islands of Florida. Mr. A. P. Morgan writes in the February number on the the phyllotaxis of leaves. Mr. C. R. Barns indicates the differences between *Heliosis* and *Helianthus*, and Mr. C. H. Peck describes eight new species of fungi. In the March number Mr. A. M. Canby contributes some interesting notes on *Baptisia*, with a synopsis of American species.

Trimen's *Journal of Botany* for February contains an interesting biographical notice of Elias Fries, by A. N. Lundström, accompanied by a portrait. The ferns of Borneo are enumerated and a number of new species described by J. G. Baker. Jacob Bigelow, the author of the "Plants of the Vicinity of Boston," a book thumbed so much by botanical students twenty years ago, and which gave such a gentle and healthful stimulus to the walks of local botanists, died recently in Boston at an advanced age. Bigelow and other botanists owed much to the zeal and activity of Dr. J. W. Robbins, of Uxbridge, Mass., who died at about the same time.

## ZOOLOGY.<sup>1</sup>

THE OVIPOSITION OF THE QUEEN BEE AND DZIERZON'S THEORY.—According to a classical theory which had its birth in Germany, and which no one now-a-days disputes, a fecundated egg of the queen bee is a female egg, and all unfecundated eggs are male. The mother bee, it is said, can even lay at will an egg of one or the other sex. This faculty, which is exceptional in the animal kingdom, is explained by assuming that the bee, at the moment of the passage of the egg into the oviduct, can apply to it or not

<sup>1</sup>The departments of Ornithology and Mammalogy are conducted by Dr. ELLIOTT COUES, U. S. A.

a certain quantity of the seminal fluid contained in the seminal receptacle. Nevertheless the organization of the generative apparatus of the bee does not differ essentially from that of the majority of female insects, to which no one has ever thought of ascribing the power of acting at pleasure upon phenomena which seem to be absolutely removed from the influence of the will.

The hypothesis was set up mainly to explain the fact, which has hitherto not been disputed, that an Italian female fecundated by a German male furnishes hybrid females (workers and queens) and pure Italian males. The opposite would be the case if a German queen were fecundated by an Italian male; so that a male egg would never receive the seminal baptism, a drone would never have a father.

Now I possess at this moment a hive, the queen of which, the daughter of an Italian of pure race, has been fecundated by a French male. The workers in fact, are partly true Italians, others French, whilst others present a mixture in various proportions of the characters of the two races.

Being surprised to see in this hive certain drones amongst others as dark as French males, when according to the theory all ought to have been Italians, like their mother, I thought it necessary to examine these males more closely. I therefore collected three hundred of them and examined them most carefully, obtaining the following statistics: 151 were pure Italians, 66 were hybrids in different degrees, and 83 were French. From this it is evident that the drone eggs, like those of the females, receive the contact of the semen deposited by the male in the female organs; and the theory of Dzierzon, proposed to explain an insufficiently-ascertained fact, becomes useless if this fact is disproved.

It is easy to understand how an insufficient observation may have led to the belief that the drones, the sons of an Italian mother fecundated by a male of a different race, were all Italians. Of 300 males only 83 appeared to me to be strictly French, while  $151 + 66$  or 217, *i. e.*, the great majority, being yellower than the French drones, might easily pass for pure Italians. Thus, in such cases, if a great number of males in a hybrid hive have not been carefully examined one by one, it is easy to understand how it might be believed that they all belonged to the same race as their mother, especially when the latter belongs to the handsomer and yellower race.—*Comptes Rendus*, Sept. 9, 1878, p. 403.

MERRILL'S ORNITHOLOGY OF SOUTHERN TEXAS.—These notes comprise a list of birds observed in the vicinity of Fort Brown, Texas, from Feb., 1876, to June, 1878. The brochure is extracted from the Proceedings of the United States National Museum, and is valuable for the many field notes regarding the breeding habits of a number of the birds mentioned, with annotations by Dr. Brewer and Mr. Ridgway. Three plates of outlines add to the

value of the article. Twelve species of birds are enumerated which cross the Mexican border, and are thus new to our avifauna.

AN INSECT BORER IN POWDER BARRELS.—We have received specimens of a Callidium (probably *C. variabile*), the larva of which have been found by Capt. McGinnis, U.S.A., to injure the hickory hoops of the powder barrels of the St. Louis Powder Depot. So injurious has this gnat proved that no inconsiderable sum is now annually spent in re-coopering barrels in order to make good the injury thus done. Means have been taken to prevent the ravages of the insects.

A LARGE SAW-FISH.—In a communication from Samuel A. Shields, Jr., we are informed that the saw-fish (*Pristis*) which was caught in Grassy sound, opposite Five-mile beach, and about seven miles from Cape May city, measured sixteen feet in length, and six feet from tip to tip of the pectorals fins; its weight when caught was seven hundred pounds. The "saw" was four feet in length with twenty-four teeth on one side and twenty-five on the other.

WRENS AND THE BEE MOTH.—My bees have at times suffered a little from the ravages of the moth. But in some seasons I have had several pairs of wrens nesting in boxes suspended from trees near my apiary, and I have noticed that during these years the moths are always scarce and but seldom seen. While my observation has not been accurate and systematic enough to enable me to say positively that the little birds, by catching the winged insects, prevented them from depositing their eggs in the hives, and thus saved the bees from the destructive ravages of the worms, I have always believed they were entitled to the fullest credit in that direction. I am so confident of their good offices, that I shall try and provide all that come to my premises with nesting-boxes, though I am well aware that the best possible protection is to keep the colonies of bees in the strongest possible condition. But I wish to give my feathered friends the amplest credit for all the good they do, and render all of the social kinds every assistance in my power.—*Chas. Aldrich, Webster city, Iowa, 1878.*

AN OWL'S REVENGE.—In a village of the canton of Vaud, the inhabitants of a comfortable dwelling house discovered, last April, that a family of owls had taken up their abode under the same roof with them. There was a hole in the wall of the gable end about twenty feet from the ground, and in it these birds had made their nest. It was the first year that they had built in that place.

A young farmer and three or four of his friends who had frequently observed the owls entering and flying out of the cavity,

resolved to examine the nest. One Sunday in May, toward the close of the afternoon, they placed a ladder against the wall, whereupon the old birds flew out, and our young observers, going in turn to the summit, were able to gratify their curiosity by inspecting the family of owls. They found several young ones of extraordinary ugliness, and, according to their own account, after examining them they carefully replaced them in the nest. The parent birds did not that evening appear to be angered at the proceeding.

The next night, however, between 9 and 10 o'clock, as the young farmer was returning home followed by his servant-man some six or seven paces in the rear, on passing by the wall in question he heard a sound of wings and a violent exclamation at the same time from the servant. The latter, in evident pain and alarm, held his hands clasped over his right eye. He stated that the owl had flown suddenly down upon him, had driven her talons into his chin and then struck him upon the right eye with her beak. The blow, fortunately, did not fall on the eye-ball, and was not followed by any mutilation. Upon examination there were to be seen, besides a violent bruise below the eye, two bleeding wounds on the chin, the unmistakable imprint of the talons of the bird of night.

The man could not sleep during the night, partly from pain, partly from the necessity of applying cooling lotions to the injured part; he had plenty of time, therefore, to meditate upon vengeance, and the destruction of the nest was determined upon. But the next morning, about 5 o'clock, a cousin of the farmer passing by found the young owls on the ground at the foot of the wall. Unaware of the attack of the evening before, he gathered them up and with the aid of the ladder replaced them in their nest. Had some one taken these little creatures out? Had they fallen down? or, had the parents ruthlessly expelled them from the nest, no longer enduring them since human eyes had seen them in all their repulsiveness? To this no one can reply. It sometimes happens that a man fired with revenge, steals, knife in hand, behind his victim, strikes the fatal blow, and then discovers that he has mistaken the person. Such an incident occurred in Morges not long since. Was this the case with the owl? Were the young ones in fact taken from the nest the succeeding evening, and did the mother's vengeful beak merely strike the wrong person? It is impossible to decide this. The servant swore by all his Saints that he had not meddled with the nest, and that at the moment when he was attacked he was as innocent as a new-born child.

The next day witnessed a new act in the little drama. The owl, guilty both of malice and of a blunder, was speedily tried, condemned, and the suppression of the entire brood included in the sentence. Execution followed in the afternoon. The owls

were absent or had fled at the raising of the ladder, but the nest was destroyed and the young ones killed. Immediately afterward the parent-birds returned, exhibited the liveliest agitation, and flew backward and forward between the roof and a neighboring tree, snapping their beaks and uttering continual cries. The death of the old birds was also decreed, and for an hour or more the young man and his friends made vain attempts to shoot them. They were provided with an excellent gun, but the movement of the birds was so rapid that all their efforts were unavailing. Twilight came on, and still the owls pertinaciously hovered in the neighborhood of their ruined home. The friends becoming impatient went away, and the increasing darkness at length compelled the young man to give up his purpose. Just then the female owl flew into the dense foliage of a tree; into this the sportsman was about to fire at hazard when he suddenly heard a violent rustling of wings and leaves; the bird shot like an arrow across the thirty or forty feet of interval, M. F. received a fierce blow full on the left eye, and at the same time was conscious of the rapid apparition of two round flaming eyes close to his face. The shock and the pain were so violent that M. F. fell backward on the ground. The owls flew away, and only reappeared at long intervals during the ensuing days. The next morning after a night of suffering, the two wounded men arrived at Lausanne, the master in a car, with a bandage over his left eye, and the servant driving, with a bandage over his right. The injuries were as follows: the man presented a severe contusion of the tissues around the lower border of the eye, extensive swelling and infiltration of blood in the eyelids and under the conjunctiva. Ten or twelve days of cold applications removed all traces of the attack.

M. F., on the other hand, was seriously injured. An L-shaped wound had laid open the cornea, through the edges of which projected two fragments of the iris. The anterior chamber was obliterated, the crystalline lens crushed, and the tissues generally infiltrated from the hemorrhage. The patient could scarcely perceive the strongest light, and his sufferings were so acute that for some days injections of morphia were continually required.

(The details of the treatment of the case will not interest the readers of the *NATURALIST*, suffice it to say that after four weeks of suffering, during which iridectomy was performed, M. F. recovered a partial degree of sight in the injured organ, though Dr. Dufour is of the opinion that the eyeball will ultimately become atrophied.)

From this recital two conclusions may be fairly drawn:

1. That the owl is courageous enough not to fear attacking a man.
2. That when thus attacking, its blows are directed only at the eye. This intention, or these tactics, as it may be termed, was clearly shown in the two occurrences related.

It was not possible to ascertain exactly to what species these owls belonged. The adult birds could be neither captured nor killed, although, as may be supposed, after the second attack a price was set on their heads. All was without avail, they withdrew from the neighborhood, and were only seen again at long intervals.—*Translated by Dr. R. Fletcher from the Bulletin de la Société Médicale de la Suisse Romande.*

### ANTHROPOLOGY.<sup>1</sup>

THE INTERNATIONAL CONGRESS OF ANTHROPOLOGICAL SCIENCES HELD IN CONNECTION WITH THE UNIVERSAL EXPOSITION AT PARIS, AUGUST 16–21, 1878.—*First Day.*—Opening address of the President, Dr. Paul Broca. Report upon anthropological societies and instructions in anthropology, by Dr. Thulie. Report upon anatomical, biological, and pathological anthropology, by Dr. Paul Topinard. Report upon ethnology of Europe, of Western Asia, and America, by M. Girard de Rialle. Report upon the ethnology of Eastern Asia, Africa, and Oceanica, by Dr. Bordier. First report palæoethnology—geological times, by M. Gabriel de Mortellet. Second report upon palæoethnology—neolithic period, or that of polished stone, by M. Emile Cartailhac. Report upon Demography in relation to Anthropology, by Dr. Chervin.

*Second Session.*—Physical development of the two sexes in Italy, by M. Pagliani. Relations of the conformation of the skull with intelligence, by M. Le Bon. Notes upon the East Indians transported into Guiana, by Dr. Maurel. Notes on the hair, by Dr. Latteux. Relations of the proportions of the skull with those of the body, by Madame Clemence Royer. New dolmens in Portugal, by M. Da Silva.

*Third Session.*—Anthropological mensurations, by Professor Stieda. The legend of the *Nuttons*, and the origin or cause of its expansion, by M. Edossard Dupont. Anthropological and ethnographical notes on Central Asia, by M. de Ujfaloy. Anthropometry, by Dr. Paul Topinard. Nineteen brains of criminals, by M. Benedict. A Tumulus on the banks of the Parana, Buenos Ayres, by M. Estanilas Ceballo. Upon the arrival of the Bo-hemians in Europe, by M. Bataillard.

*Fourth Session.*—The ancient Guanches, by Dr. Chil y Naranjo. Creation of laboratories in the colonies of different States, by Prof. Virchow. Incised bones of cetaceans of the tertiary epoch, by Professor Capellini. The flaked flints of St. Acheul, by M. d'Acy. A cemetery of the epoch of bronze at Pogues (Nièvre), by M. Jacquinot. Digging in the grotto of the Mammoth, Poland, Count Zawisha.

*Fifth Session.*—The ancient monuments on the banks of the Vistula, by M. Zaborrowski. Homotypical characteristics of the thoracic and abdominal members, by M. Alexis Julien. Differen-

<sup>1</sup> Edited by Prof. ORIS T. MASON, Columbian College, Washington, D. C.